What is claimed is:

1. An air conditioning system, comprising:

a compressor for compressing a refrigerant, the refrigerant being a compressible phase change fluid;

a condensing unit operatively connected to the compressor;

an evaporator unit and an associated expansion means operatively interconnected to the condensing unit and to the compressor, the evaporator unit being in heat exchange relationship with a supply air stream for an indoor space inside a structure, the compressor being operable to circulate the refrigerant between the condensing unit and the evaporator unit to cool the supply air stream;

a thermal energy storage unit including a tank having a thermal energy storage medium disposed therein and having an associated heat exchanger, the heat exchanger being operably connected to the compressor and evaporator;

a refrigerant circulating device for circulating refrigerant through the heat exchanger in the tank and between the tank and the condenser and evaporator;

wherein the refrigerant circulating device includes a prime mover and an auxiliary liquid which is acted upon by the prime mover, the auxiliary liquid being coupled to the refrigerant, whereby force exerted by the prime mover on the auxiliary liquid is indirectly transferred to the refrigerant.

2. The air conditioning system of claim 1, wherein the auxiliary liquid has a higher relative viscosity and a lower relative vapor pressure than the refrigerant.

3. The air conditioning system of claim 1, wherein the refrigerant is Freon.

4. The air conditioning system of claim 1, prime mover is a positive displacement pump.

5. The air conditioning system of claim 1, wherein the prime mover communicates with a pair of fluid cylinders containing oil as an auxiliary fluid and wherein the prime mover exerts a motive power upon pistons located within the fluid cylinders to thereby mechanically couple the motive power of the prime mover to the refrigerant being circulated in the system.

6. The air conditioning system of claim 1, wherein the prime mover communicates with a pair of fluid cylinders containing the auxiliary fluid and wherein the prime mover exerts a motive power on a flexible bladder located within the each of the fluid cylinders to thereby couple the motive power of the prime mover to the refrigerant being circulated in the system.

7. The air conditioning system of claim 1, wherein the prime mover is powered by a direct current motor and battery.

8. The air conditioning system of claim 1, wherein the storage medium in the tank is water.

9. An air conditioning system, comprising:

a compressor for compressing a refrigerant, the refrigerant being a compressible phase change fluid;

a condensing unit operatively connected to the compressor;

an evaporator unit and an associated expansion means operatively interconnected to the condensing unit and to the compressor, the evaporator unit being in heat exchange relationship with a supply air stream for an indoor space inside a structure, the compressor being operable to circulate the refrigerant between the condensing unit and the evaporator unit to cool the supply air stream;

a thermal energy storage unit including a tank having a thermal energy storage medium disposed therein and having an associated heat exchanger, the heat exchanger being operably connected to the compressor and evaporator, the thermal energy storage unit further including a temporary refrigerant storage tank;

a refrigerant circulating device for circulating refrigerant through the heat exchanger in the tank and between the tank and the condenser and evaporator;

wherein the refrigerant circulating device includes a prime mover and an auxiliary liquid which is acted upon by the prime mover, the auxiliary liquid being coupled to the refrigerant, whereby force exerted by the prime mover on the auxiliary liquid is indirectly transferred to the refrigerant;

a valve system for controlling the flow of refrigerant through the air conditioning system, the valve system being operative to provide three distinct time periods of operation for the system, a first time period which allows refrigerant to flow from the condenser to the heat exchanger of the thermal energy storage unit to freeze the medium in the tank and to then return to the condenser without utilizing the evaporator, a second time period which bypasses the condenser and circulates refrigerant through the thermal storage unit and through the evaporator to thereby cool the supply air inside the structure before returning to the thermal storage unit, and a third time period which utilizes only the temporary refrigerant storage vessel of the thermal storage unit and which utilizes the condenser and evaporator to cool the supply air inside the structure as if the thermal storage unit were not present.

10. The air conditioning system of claim 9, wherein the auxiliary liquid has a higher relative viscosity and a lower relative vapor pressure than the refrigerant.

11. The air conditioning system of claim 9, wherein the prime mover is a positive displacement pump.

12. The air conditioning system of claim 9, wherein the prime mover communicates with a pair of fluid cylinders containing oil as an auxiliary fluid and wherein the prime mover exerts a motive power upon pistons located within the fluid cylinders to thereby mechanically couple the motive power of the prime mover to the refrigerant being circulated in the system.

13. The air conditioning system of claim 9, wherein the prime mover communicates with a pair of fluid cylinders containing the auxiliary fluid and wherein the prime mover exerts a motive power on a flexible bladder located within the each of the fluid cylinders to thereby couple the motive power of the prime mover to the refrigerant being circulated in the system.

14. The air conditioning system of claim 9, wherein the prime mover is powered by a direct current motor and battery.

15. The air conditioning system of claim 9, wherein the storage medium in the tank is water.

16. A method of operating an air conditioning system having a compressor, a condensing unit, an expansion unit and an evaporator, all operative interconnected, the evaporator unit being in heat exchange relationship with a supply air stream for an indoor space inside a structure, the compressor being located exterior to the structure and being operable to circulate refrigerant between the condensing unit and the evaporator unit to cool the supply air stream, the method comprising the steps of:

locating a thermal energy storage unit exterior to the structure to be cooled and connecting the thermal storage unit solely to refrigerant lines running to and from the compressor without altering the existing expansion unit and evaporator unit;

operating the air conditioning system through at least two distinct phases of operation, one phase of operation including the running of the compressor to supply refrigerant to the expansion unit and the evaporator unit to cool the indoor space inside the structure and another distinct phase of operation being the operation of the thermal energy storage unit to exactly simulate the running of the compressor without powering the compressor.

17. The method of claim 16, wherein the thermal storage unit includes a tank, a storage medium within the tank, and a heat exchanger located in the tank.

18. The method of claim 17, wherein the system is further provided with a refrigerant circulating device for circulating refrigerant through the heat exchanger in the tank and between the tank and the condenser and evaporator unit; wherein the refrigerant circulating device includes a prime mover and an auxiliary liquid which is acted upon by the prime mover, the auxiliary liquid being coupled to the refrigerant, whereby force exerted by the prime mover on the auxiliary liquid is indirectly transferred to the refrigerant.

19. The method of claim 18, wherein the auxiliary liquid has a higher relative viscosity and a lower relative vapor pressure than the refrigerant.

20. The method of claim 18, wherein the prime mover is a positive displacement pump.

21. The method of claim 18, wherein the prime mover communicates with a pair of fluid cylinders containing oil as an auxiliary fluid and wherein the prime mover exerts a motive power upon pistons located within the fluid cylinders to thereby mechanically couple the motive power of the prime mover to the refrigerant being circulated in the system.

22. The method of claim 18, wherein the prime mover communicates with a pair of fluid cylinders containing the auxiliary fluid and wherein the prime mover exerts a motive power on a flexible bladder located within the each of the fluid cylinders to thereby couple the motive power of the prime mover to the refrigerant being circulated in the system.

23. The method of claim 18, wherein the prime mover is powered by a direct current motor which is connected to a battery as an energy source.

24. A method of operating an air conditioning system having a compressor, a condensing unit, an expansion unit and an evaporator, all operative interconnected, the evaporator unit being in heat exchange relationship with a supply air stream for an indoor space inside a structure, the compressor being located exterior to the structure and being operable to circulate refrigerant between the condensing unit and the evaporator unit to cool the supply air stream, the method comprising the steps of:

locating a thermal energy storage unit exterior to the structure to be cooled and connecting the thermal storage unit solely to refrigerant lines running to and from the compressor without altering the existing expansion unit and evaporator unit;

providing control means for controlling the flow of refrigerant through the air conditioning system, control means being operative to provide three distinct time periods of operation for the system, a

first time period which allows refrigerant to flow from the condenser to the heat exchanger of the thermal energy storage unit to freeze the medium in the tank and to then return to the condensing unit without utilizing the evaporating unit, a second time period which bypasses the condensing unit and circulates refrigerant through the thermal storage unit and through the evaporating unit to thereby cool the supply air inside the structure before returning to the thermal storage unit, and a third time period which utilizes only the temporary refrigerant storage vessel of the thermal storage unit and which utilizes the condensing unit and evaporating unit to cool the supply air inside the structure as if the thermal storage unit were not present.

25. The method of claim 24, wherein a refrigerant circulating device is provided for circulating refrigerant through the heat exchanger in the tank and between the tank and the condensing unit and evaporating unit;

wherein the refrigerant circulating device includes a prime mover and an auxiliary liquid which is acted upon by the prime mover, the auxiliary liquid being coupled to the refrigerant, whereby force exerted by the prime mover on the auxiliary liquid is indirectly transferred to the refrigerant.